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ABSTRACT

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Developing Communicative Intentions in a Language Delayed Preverbal Child A Case Study

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Abstract

This training study was designed to use the developmentally appropriate communicative intention of protest as a vehicle for teaching request for object to one language delayed preverbal child. Results revealed that with a specific intervention model the subject learned to gesturally, vocally and verbally express the communicative intention being taught. Moreover, the subject learned other intentions which were not taught. Findings suggest that by teaching certain developmentally appropriate intentions a child may acquire other intentions through a generalization of knowledge. The clinical importance of teaching intentional communication behavior is discussed.

Communicative intent, defined by Chapman (1981) as the reasons why people talk, has increasingly become the focus of a variety of studies in the area of normal child language acquisition (Harding 1982; Prutting, 1979; Reese, 1978; Roth and Spekman, 1984a). These studies have examined intentions used by children in varying nonlinguistic contexts and have also offered carefully defined taxonomies or categories of intentions (Bates, 1976; Chapman, 1981; Coggins and Carpenter, 1981; Dore 1974, 1976; Greenfield and Smith, 1976; Halliday, 1975; Roth and Spekman, 1984b). Results from these studies suggest that normally developing children, at sensori-motor stages IV and V, gesturally and vocally express a variety of identifiable intentions. Further, they express these intentions while still at a preverbal or early single word utterance level. By the end of their first year children often demonstrate an ability to intentionally communicate requests for objects and actions, comment on objects and actions and protest events in their environment (Chapman, 1982). Moreover, these communicative intents vary appropriately in use depending on the specific nonlinguistic environmental context and relate correctly to events that precede or follow the behavior (Chapman, 1982).

In terms of both method and results, studies in this area add significantly to our understanding of how communicative intentions are identified, acquired, assessed and used in context by preverbal children. However, little systematic information exists concerning what appears to be a logical next step in the investigation of communicative intent. Specifically how might intentions be taught to, or generated in, a language delayed preverbal child who lacks the ability to express context

appropriate intentions. In the present study we were concerned with trying to improve the communicative ability of this type of child through the use of a specially designed intervention procedure. Primarily, the intervention procedure utilized the naturally occurring nonverbal event of invasion of the child's personal space. This procedure, presented in the form of two continuous tracks, which are discussed in the Methods section of this article, was used to elicit from the child the intentions of protest and request for object (Bates, 1976; Bassett and Smythe, 1979).

The purpose of this study was two fold: 1) to develop an intervention model for utilizing the early emerging communicative intention of protest to teach the intention of request for an object, and 2) to conduct a case study using this model with a preverbal language delayed child who demonstrated minimal ability to spontaneously express communicative intent.

METHOD

Subjects

A single subject was used in this study. The subject was a 3 year, 6 month old male child enrolled in a special needs preschool and living at home. At the time of the investigation, the subject had been in school for approximately 7 months and had been receiving regular speech/language and occupational therapy as part of the special classroom curriculum. The subject had no evidence of hearing impairment or physical handicaps. He was diagnosed by the public school multidisciplinary team as language delayed, which was also the basis for his placement in the special class.

The subject was selected for this study in part because he was essentially nonverbal and was reported by his speech/language clinician as consistently being unable to express any vocal, verbal or gestural communicative intentions. The basis for this assessment by the clinician was a systematic observation of data obtained during a 4 week diagnostic intake placement in the special preschool. Prior to beginning the investigation, the subject was given a complete communication behavior assessment. Results of this assessment determined that the subject was functioning primarily at Piagetian sensori-motor stage VI on the Uzgiris-Hunt Scales (Uzgiris and Hunt, 1975). The subject was also given the Sequenced Inventory of Communication Development (SICD) which indicated an expressive language level of 12 months and receptive language at the 24 month level. Further, at the beginning of the intervention process, the subject showed no evidence of single word production.

Pre and Post-Test for Communicative Intentions

Because this was a training study, a primary concern was the need to reliably identify and code the communicative intentions used by the subject in the following phases of the study: pretest, theory (intention) phase and post-test. This was accomplished through the use of the Coggins and Carpenter (1981) Communication Intention Inventory (CII). Table 1 provides a list of eight operationally defined communicative intentions which were considered in this investigation (Coggins and Carpenter, 1981).

Interjudge reliability levels for coding communicative intentions were established for two masters level speech/language clinician

recorders, according to the procedures recommended in the observer-scorer reliability section of the CII. The interjudge reliability for the mean proportion of correct coding of the communication behavior sequences during pretest and post-test intervention sessions was .90 (range .89-.91). The behavioral sequences used to establish inter-judge reliability were from a different child than the one under study in this investigation.

Selection of Intentions to Teach

The pretest was used as a basis for identifying which intention would be most developmentally appropriate to teach. Results of the pretest suggested that the subject expressed only a gestural comment on an object on a consistent basis. Developmentally, the intentions of protest and request for an object or actions should appear at approximately the same time as a comment and certainly should be observed by sensori-motor stage VI (Chapman, 1982). The intention of protest was therefore used whenever necessary as a vehicle for teaching the intention request for object in the teaching portion of this intervention study.

Intervention Model: Decision Rules and Reliability

In order to use the intentions of protest as a vehicle to teach request for an object, a two track intervention model with associated decision rules was developed with Track 2 being an extension of Track 1 (see Table 2 for Track 1 rules and Table 3 for Track 2 rules). Both tracks of the model are based on an initial nonverbal invasion of the child's personal space in order to elicit a protest.

Before discussing the rationale for the selection of either Track 1 or 2 in therapy, the issue of establishing reliability for what

was being taught must be addressed. Because two clinicians provided therapy to the subject, it was necessary to insure that both clinicians were teaching the intentions of interest in a similar fashion. This was accomplished in two ways. First, the same clinicians who were judged reliable in using the CII in pre and post-testing also provided therapy to the subject. Both clinicians were therefore operationally familiar with the communicative intentions of interests; i.e., protest and request for an object. Secondly, the two clinicians explicitly followed the Track 1 and 2 decision rules during the therapy session.

The rationale for initiating intervention using either Track 1 or 2 decision rules to generate a request intention in the subject was based on a preliminary pilot study. Results suggested that Track 1, requiring the use of a single object, provided a more simplified task for direct modeling of protest and request intentions and acquainting the subject with the task. Subsequently Track 2, which requires the use of 2 objects, was effective in eliciting a protest followed by a request intention or a request intention directly.

Based on this, the intervention model for the present study began with Track 1 and shifted to Track 2 once the subject showed evidence of understanding and attending to the task.

Procedure

Pre and post-tests consisted of two video taped, thirty minute naturalistic free play sessions which were scored by the trained observers and during which no intervention procedure was employed. During these sessions, the child played spontaneously in the presence of a familiar adult who responded to the child but did not initiate

and with both novel and familiar toys. The intervention consisted of the subject being given therapy in sessions lasting at least 10 minutes with Tracks 1 and 2 of the intervention model. The steps in the Track 1 and 2 decision rules were followed explicitly. The subject received therapy over a continuous three week period from two clinicians who alternated sessions with the subject for fifteen consecutive school days. As a probe for coding the intentions, five randomly selected therapy sessions were video taped.

Throughout the intervention, the subject was allowed to express intentions gesturally, vocally, verbally, or in combination. The goal of the intervention was to help the child learn to express specific intentions in the appropriate nonverbal environment. The particular mode of expressions used by the child was not of concern.

Analysis

This was a single subject case study with no control using a time series graph to show systematic changes in one child's communication behavior during the intervention process. Pre and post data are also presented to show specific changes in the type and frequency of communicative intentions expressed as well as the method (vocal, gestural or verbal) used by the subject to express those intentions. Additionally, a nonparametric test of goodness of fit was employed to verify that only the request for object intention was indeed being directly taught during the intervention phase of the study.

RESULTS AND DISCUSSION

Data concerning the subject's use of the protest and request intentions were derived from the pre and post assessments of the subject and from the five randomly selected videotaped probe therapy sessions.

The pre and post-test frequency data in Table 4 show that prior to the intervention, the subject used a total of 18 intentions. One was a protest intention and three were requests for objects. Following the intervention, post data revealed a total of 20 requests for objects and 2 protests, as well as an increase in the use of other intentions which were not directly taught. This shows a substantial increase in the subject's use of requests for objects and no apparent increase in protests. In addition, the subject showed a marked increase in the number of vocalizations and verbalizations between the pre and post-tests. To better understand these results, the probe session data were examined.

Data for protest, request for object, and number of trials in the five probe sessions, and pre and post-test, are displayed in Figure 1 in a time series graph. These data show that the subject concistently used the request for object intention during therapy. In addition, the trial data show that initially the subject used approximately the same number of requests intentions as there were trials. By session nine, however, the subject appropriately used at least 20% more requests than there were trials and the data are consistent through session 15. This suggests that the subject began to spontaneously use requests for objects in therapy. The data from the free play post-test session corroborate this finding.

Concerning the protest intention, the data suggest that the subject did use protests during therapy. It is possible that the subject did learn that protest alone was not adequate to effect change in his environment. Rather, if he wanted to satisfy a want or need, it was

necessary for him to make a specific request. This suggests that the intervention model functioned appropriately given that the protest intention was used as a vehicle for teaching request for object.

Post-test data also indicates that the subject increased his usage of several intentions which were not being directly taught (Figure 2). The relative frequency of occurence of the other intentions was examined in relation to request for object frequency in each of the five probe sessions to verify that only the request for object was being taught during therapy. This was accomplished with the nonparametric test of goodness of fit. Results showed a significant difference between the requests for object distribution versus expected distribution based on other intentions (x^2 (df=4) = 14.61, p .05). The observed frequency distribution of request for object did not match the expected distributions based on other intentions. This indicated that while request for object was being taught the other intentions were not being taught or learned in the systematic fashion of the request for objects (Williams, 1979).

The other aspect of the data which is of interest is the subject's gradually increasing use of both vocalizations and verbalizations during the study (Table 5). Given that the subject was allowed to use any combination of gestural, vocal and/or verbal expression during therapy, the data show that the subject spontaneously increased his use of both vocalizations and verbalizations during the training study.

These results suggest that the intervention model was successful given that the subject did learn the appropriate and spontaneous

intentional use of protests and requests for objects. Other useful by-products of this intervention are the subject's apparent spontaneous and appropriate use of intentions which were not directly taught, as well as an increase in his vocalizations and verbalizations. This increase in intentions which were not specifically taught may be the result of the child developing during therapy a greater understanding of the communication process. This phenomenon, however, needs to be examined more fully in a future and more broadly based study.

COMMENT ON CLINICAL APPLICATIONS

Traditional language therapy has often focused initially on the teaching of semantic, syntactic and morphological (vocabulary) skills in fixed or varying nonlinguistic environment. In the present study, this subject's non linguistic environment was varied in order to put the subject in situations which required the expression of specific communicative intent. Vocabulary, syntactic form and semantic intent were not directly addressed. Based on the results of this study, it may be appropriate for certain preverbal children to begin intervention by learning to express basic communicative intent without regard to vocabulary or specific language structure. Subsequently, vocabulary and syntax could be taught to the child in a way that would more logically interface with the child's established and contextually relevant knowledge of communicative intent.

Table 1

General Definitions of Eight Intentional Categories
(Coggins and Carpenter, 1981)

Comment on Action:	Direction of the listener's attention to some observable referent. An intentional behavior that appears to call the listener's attention to the movement of some object rather than the object per se.
Comment on Object:	Direction of the listener's attention to some observable referent. An intentional behavior that appears to call the listener's attention to some object identified by the child.
Request for Action:	Solicitation of services from a listener where child awaits a response. An intentional behavior that directs the listener to act upon some object in order to make the object move. The child's interest appears to be in the action of the object rather than in the object per se.
Request for Object:	Solicitation of services from a listener where child awaits a response. An intentional behavior that directs the listener to provide some object for the child; the object is usually out of reach due to some physical or spacial barrier.
Request for Information:	Solicitation of services from a listener where child awaits a response. An intentional behavior that directs the listener to provide information about an object, action or location.
Answering:	Responding to a request for information with the semantically appropriate data.
Acknowledging:	Providing notice that a previous gesture or utterance was received.
Protesting:	Expressing disapproval of the speaker's action or utterance.

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Table 2

INTERVENTION MODEL
Decision Rules for
Training Communicative Intents of
Protest and Request for Object

Track 1 Rules

NONVERBAL PROCEDURE: Remove the object subject(S) desires from his personal space and keep it close by and in his field of vision.

SEQUENCE: A) Give S desired object for at least 10 seconds.
B) Take away desired object (object visible but out of reach).
C) Wait 10 seconds for reaction.

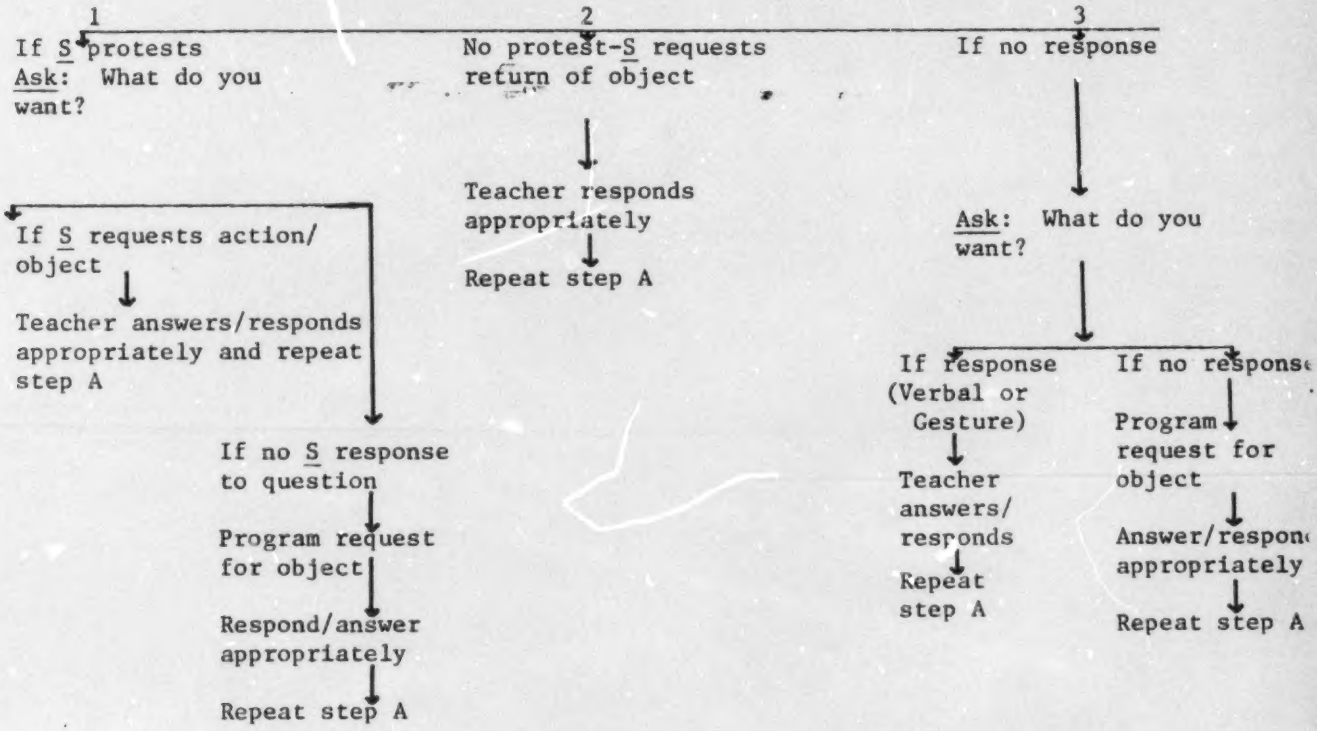

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Table 3

INTERVENTION MODEL
Decision Rules for
Training Communicative Intents of
Protest and Request for Object

Track 2 Rules

NONVERBAL PROCEDURE: Invade subject's(S) personal space nonverbally by putting an object near him that he does not want and in place of an object he does want. (Desired object may remain visible.)

SEQUENCE: A) Put object in S personal space that he does not want or does not expect in that situation in place of one he does want.
B) Wait 10 seconds (see B^1 and B^2 below).

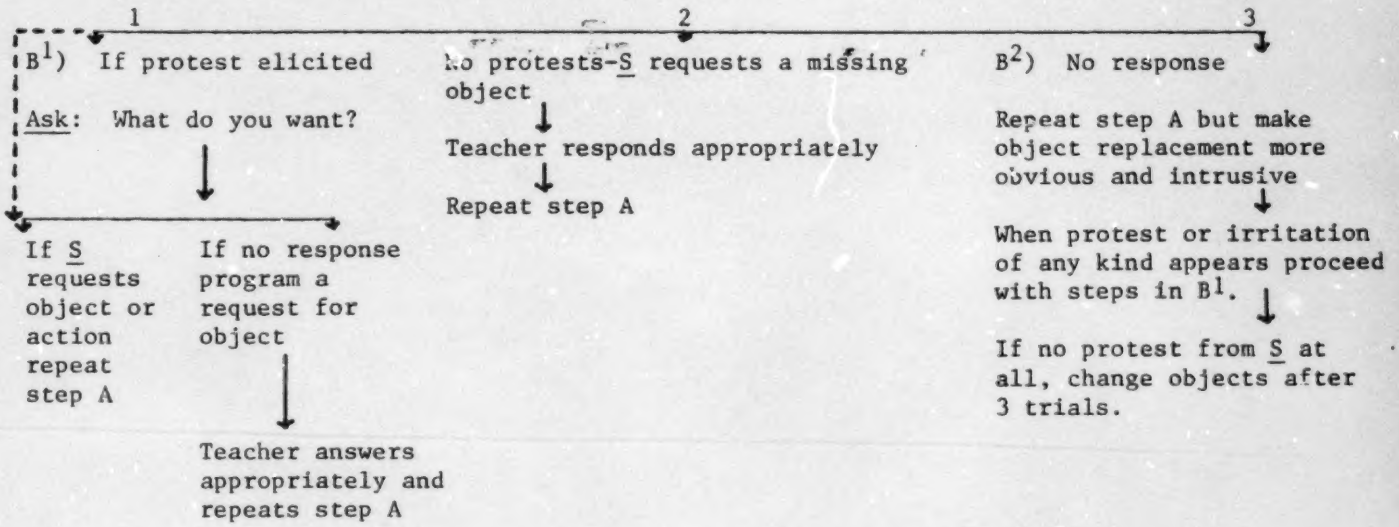
1
2
3
B1) If protest elicited
Ask: What do you want?
If S requests object or action repeat step A
If no response program a request for object
Teacher answers appropriately and repeats step A
No protests-S requests a missing object
Teacher responds appropriately
Repeat step A
B2) No response
Repeat step A but make object replacement more obvious and intrusive
When protest or irritation of any kind appears proceed with steps in B1.
If no protest from S at all, change objects after 3 trials.

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Table 4

FREQUENCY OF OCCURANCE AND MODE OF PRODUCTION
FOR EACH OF THE EIGHT COMMUNICATIVE INTENTS
DURING THE PRE AND POST ASSESSMENT

Communicative Intents (CI)	Preassessment GGV[1]	V[2]	Totals	Post Assessment GGV	V	Totals
Comment on action	0	0	0	1	0	1
Comment on object	9	0	9	6	0	6
Request for information	0	0	0	0	0	0
Answering	3	0	3	8	1	9
Request for action	1	0	1	9	0	9
Request for object	3	0	3	4	16	20
Acknowledging	1	0	1	11	2	13
Protesting	1	0	1	2	0	2
Overall totals for GGV, V and com. intents	18	0	18	41	19	60

1. GGV refers to gestural or gestural vocal
2. V refers to verbalization

Table 5

VOCALIZATIONS AND VERBALIZATIONS
During PRE-TEST, POST-TEST and PROBE
THERAPY SESSIONS

	VOCALIZATIONS	VERBALIZATIONS	TOTAL
PRE-TEST (30 Minutes)	0	0	0
PROBE THERAPY SESSIONS (10 Minutes)			
2	4	0	4
5	17	1	18
9	30	13	43
13	13	7	20
15	26	28	54
POST-TEST (30 Minutes)	31	19	50

Figure 1: Time series graph showing subjects use of the protest and request for object intentions in the pre-test, post-test and the 5 probe therapy sessions (2, 5, 9, 13, 15). Data are presented by therapy session with number of intentions and trials indicated. Abbreviations in the graph are: RQO (Request for Object); PR (Protest); TR (Trial).

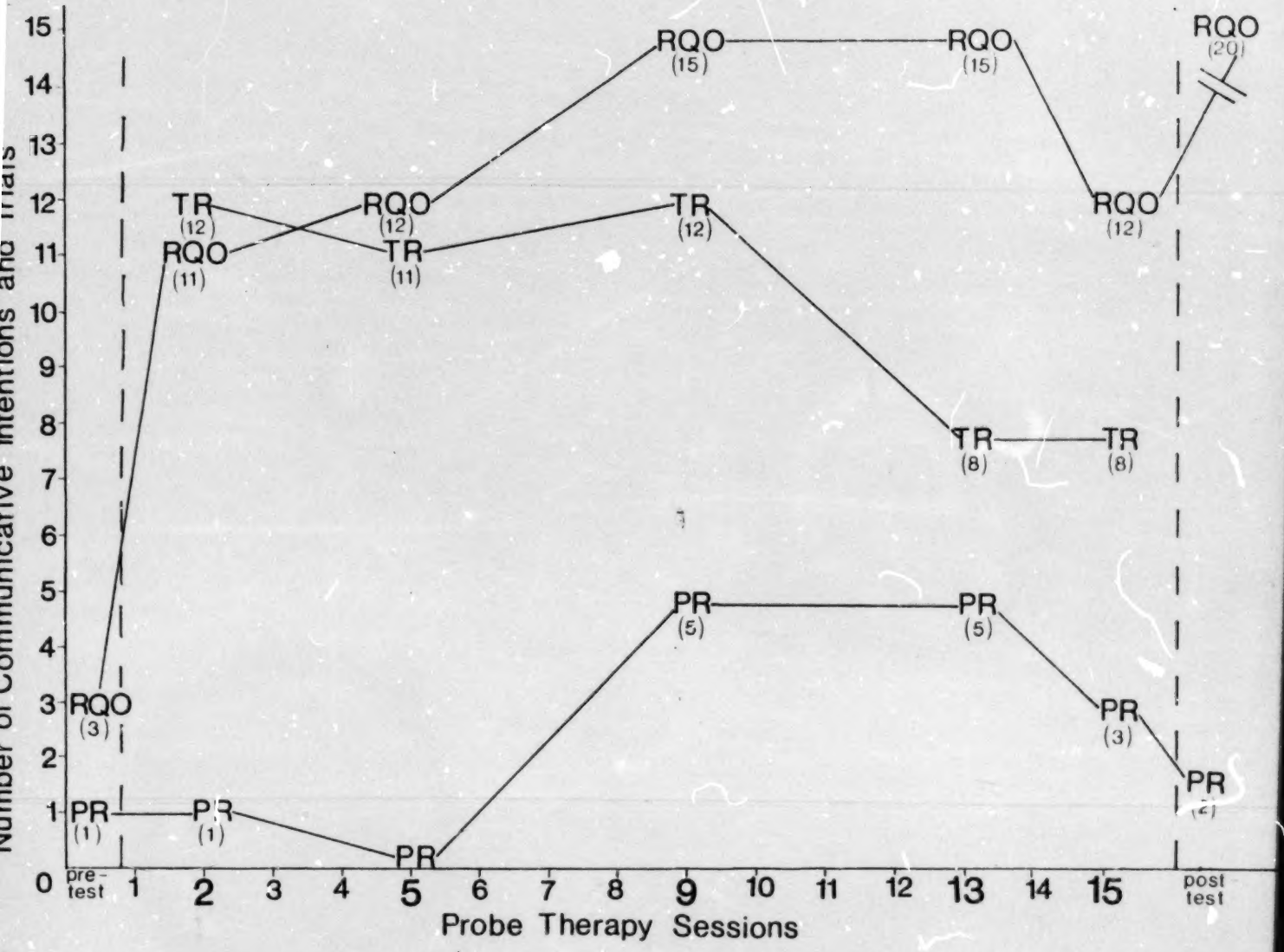
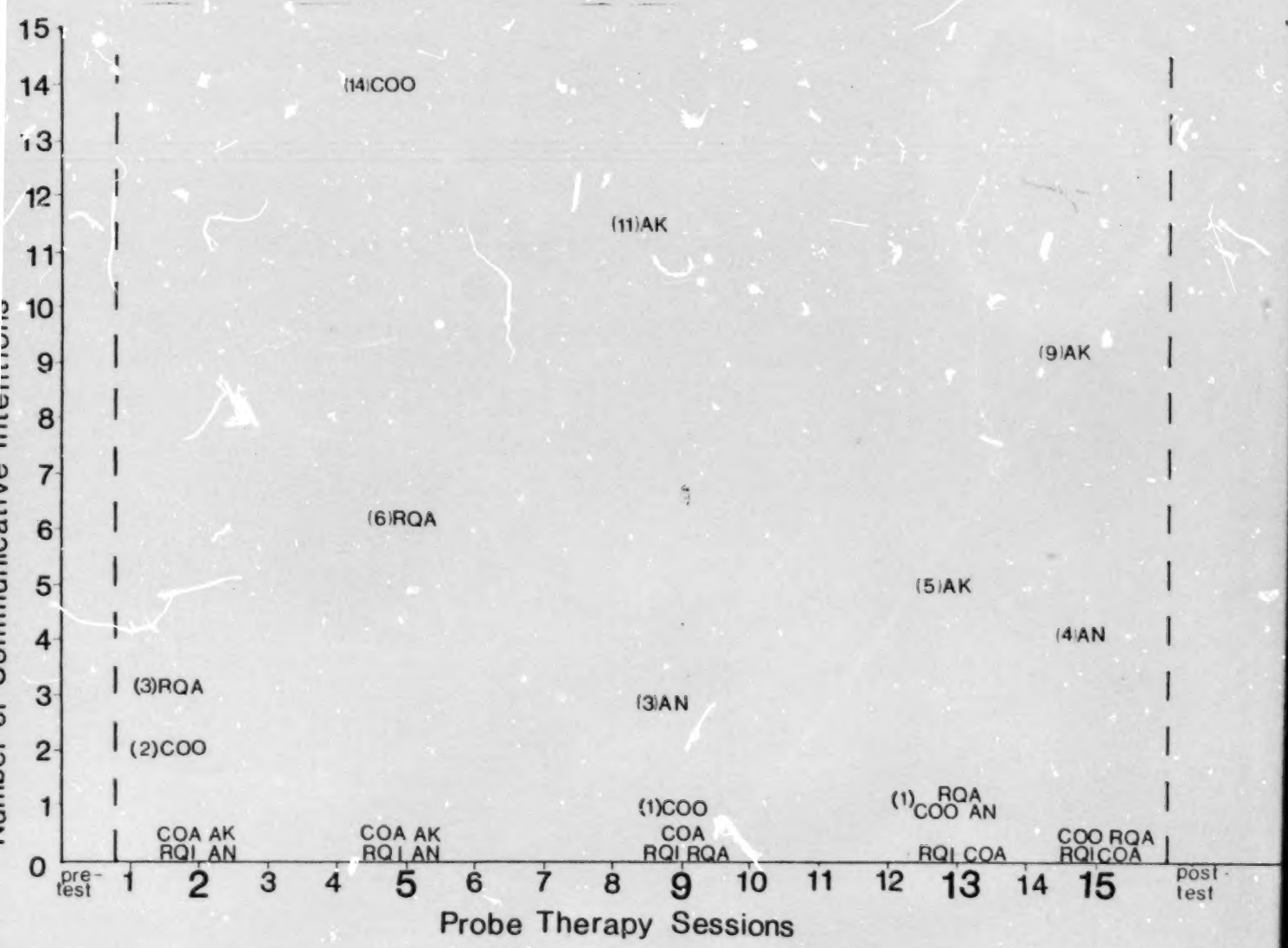

Number of Communicative Intentions and Trials
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
RQO (3)
PR (1)
TR (12)
RQO (11)
PR (1)
RQO (12)
TR (11)
PR
RQO (15)
TR (12)
PR (5)
TR (8)
RQO (15)
PR (5)
TR (8)
RQO (12)
PR (3)
RQO (20)
PR (2)
pre-test
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
post test
Probe Therapy Sessions

Figure 2: Time series graph of the five probe sessions (2, 5, 9, 13, 15) showing frequency of occurance of intentions other than protest and request for object. Data are presented by therapy session and number of intentions. Abbreviations in the graph are: RQA (Request for Action); RQI (Request for Information); COO (Comment on Object); COA (Comment on Action); AK (Acknowledgement); AN (Answering).


Number of Communicative Intentions
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
(14)COO
(11)AK
(9)AK
(6)RQA
(5)AK
(4)AN
(3)RQA
(2)COO
(3)AN
(1)COO
(1) RQA COO AN
COA AK RQI AN
COA AK RQI AN
COA RQI RQA
RQI COA
COO RQA RQI COA
pre-test
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
post-test
Probe Therapy Sessions

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